

Deploying Windows 2000® In An International Environment

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Key Customer Issues: Users (1)

- ◆ **Multilingual communication**
 - **Create and exchange documents in multiple languages and locale settings**
 - **Example: Send/receive email in Mandarin using Korean operating system**
 - **Example: Create Japanese document, with quoted Arabic, on French operating system**

Key Customer Issues:

IT

- ◆ **Support for users with different language requirements**
- ◆ **Cost effective solution for supporting different language versions released at different times**
- ◆ **Minimize cost of deploying and maintaining multiple languages on Desktop and Server**

Key Concepts: Locale and Language Support

- ◆ **What is a locale?**
 - 1. A place or locality (Dictionary definition)**
 - 2. Set of user preferences related to language and local customs**
- ◆ **Microsoft uses the term in many ways**

Locales:

- ◆ **User Default Locale:**
User preferences for formatting of dates, currencies, numbers, etc.
- ◆ **System Default Locale:**
Not really a locale - “ANSI emulation mode” would be a better term. Determines which ANSI (non-Unicode) applications will run correctly

Related Concepts

- ◆ **Language Group:**
A family of languages based on common scripts in Windows 2000
- ◆ **Input Locales:**
Pairing of 1) input language and
2) method of input;
determines what language is currently being entered and how it's being entered

More Related Concepts

A collection of characters for representing text (*not* a programming language such as Java Script)

- ◆ **Enabling:**
 1. Adding support for input, display, and output of a particular script, e.g., in documents
 2. Making it possible to run *localized* applications in a particular script
- ◆ **Localization:**



Demo

Windows 2000 Initiatives

- ◆ **More languages & cultures**
 - **former Soviet Union**
 - **Middle East**
 - **South Asia**
- ◆ **Integrated language support**
 - **Single core binaries**
- ◆ **Multilanguage Version**
 - **Usable worldwide**

New Languages and Cultures

Support for Complex Scripts in Windows 2000

A complex script is one that requires special processing, such as:

- ◆ Bi-directional (BiDi) reordering (**Arabic, Hebrew**)
- ◆ Contextual shaping (**Arabic, Indic family**)
- ◆ Display of combining characters (**Arabic, Thai, Indian**)
- ◆ Specialized word-break and justification rules (**Thai**)
- ◆ Disallowing illegal character combinations (**Indian, Thai**)

Features of Complex Scripts

Character rearrangement

- ◆ Formation of indivisible clusters
- ◆ Caret movement through a cluster



RTL Orientation, or “Mirrored”



Worldwide Core Binaries

All language versions of Windows 2000 use the same core binary files!

◆ Users:

- Enter text in any supported language on *any* version of Windows 2000
- Win32 app runs on any version of Windows 2000

◆ Developers:

- Develop all language versions on one system
- Ship a single binary for all languages

◆ IT:

- Fewer system differences
- Easier administration and maintenance

How is it done?

- ◆ Use the Unicode character encoding to encode all text in the system
- ◆ Enable all binary files for all scripts
- ◆ Install all files and settings required for each selected *language group*

Unicode allows processing of Multilingual Content

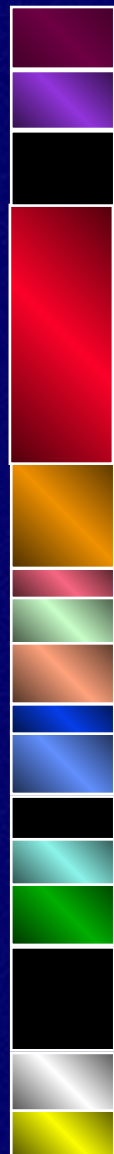
System components:

- Internet Explorer 5.0 can do amazing things!
- Others: Winlogon, File system, Notepad, etc.

◆ Unicode applications

- Office 2000
- Your application!

0xFFFF



Compatibility

Private use

Future use

Ideographs
(Kanji, Hanja)

Hangul

Kana

Symbols

Punctuation

Thai

Indic

Cyrillic

Greek

Latin

Ascii

0x0000

Unicode™/ISO 10646

◆ 16-bit
international
character
encoding

◆ Windows 2000
uses Unicode
version 2.1

A	院	ㄟ	亥	(nul
0041	9662	FF96	4F85	0000

Relatives Of Unicode

◆ ISO/IEC 10646

- 32 bit ISO standard of 64K X 64K “planes”
- Unicode repertoire is plane 0

◆ UTF-7

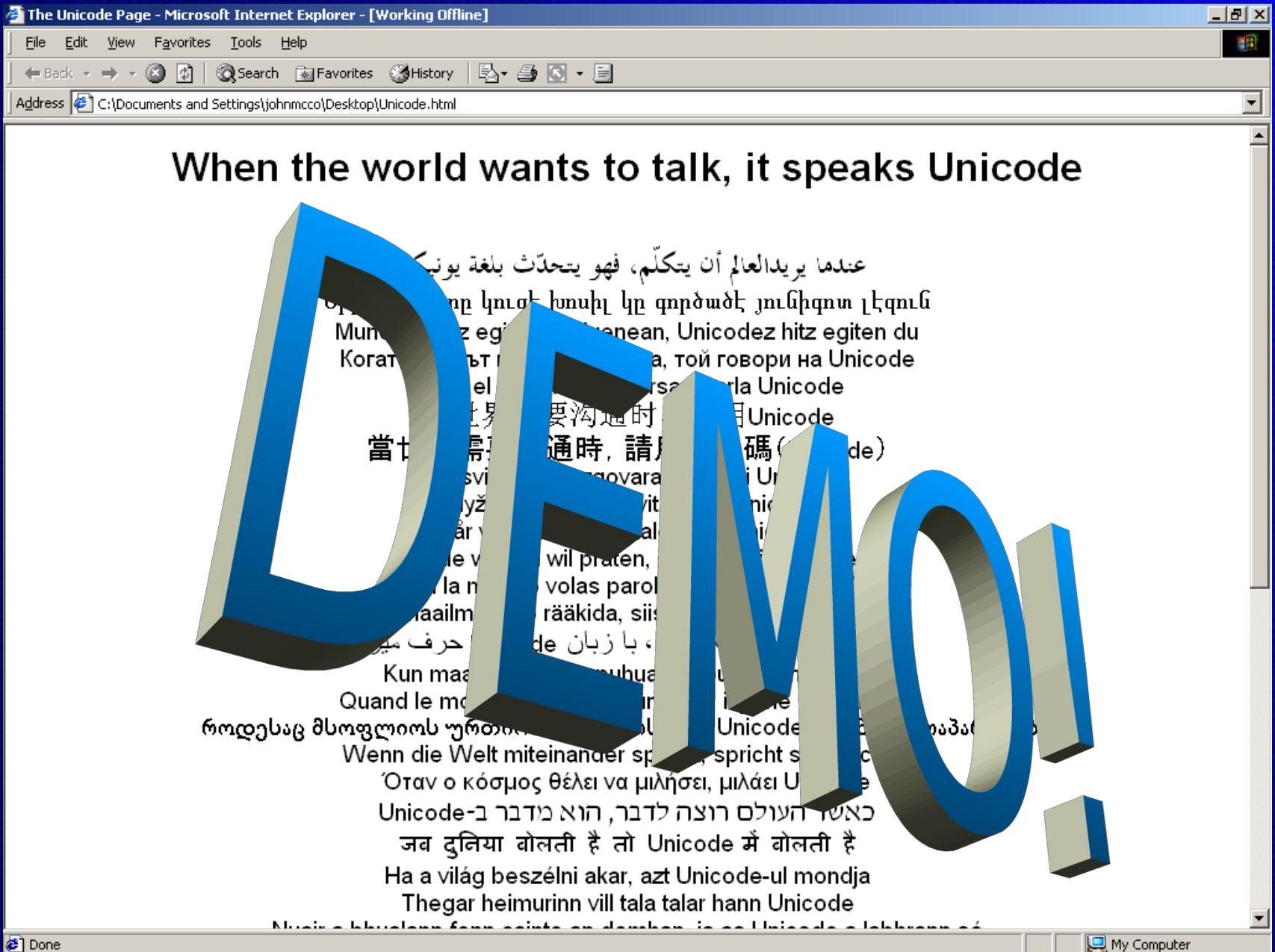
- 7 bit transformation format
- Not widely used

◆ UTF-8

- 8 bit transformation format
- For transmission over unknown lines, e.g., Web pages
- Avoids problem bytes in 0x00-0x1F and 0x7F-0xA0
- Codepage number CP_UTF8 = 65001

Why does this matter?

- Most applications today are “ANSI” (e.g., assumes an 8 bit codepage to represent text)
- ◆ System converts text in the *system codepage* from/to Unicode for the application
- ◆ The system default locale determines the system codepage
- ◆ ANSI applications are severely restricted in multilingual support!



Windows 2000 MultiLanguage Technology

Goals

- ◆ **Enable the best multilingual infrastructure solutions for**
 - **End Users**
 - **IT managers and Networks administrators**
- ◆ **Decrease the cost of implementing and maintaining IT environments with multiple languages**

MultiLanguage Version reduces TCO

◆ Today with NTW4/Win 9.x, need to support the following users in IT environment:

English users

German users

Spanish Users

Need to deploy localized O/S to each user



Big burden to deploy and maintain

3 different versions of the operating system

3 different service packs

Based on 3 release schedules

Windows 2000 MultiLanguage Version (MLV)




- ◆ **Language of menus and dialogs is a per-user setting**
- ◆ **Sold through MOLP, Select, and Enterprise Agreement**
- ◆ **Available to developers through MSDN**

What Stays in English

- ◆ **All 16-bit pieces of the OS**
- ◆ **Bitmaps (including those in resources)**
- ◆ **All registry keys and values**
 - **e.g. OLE commands**
- ◆ **Folder and file names**
 - **e.g. Folders and link names in Start menu**
 - **INF files**

New Windows 2000 Multilingual Options

Which version should I use?

Scenarios For Users and Organizations	<ul style="list-style-type: none">▪ <i>Comfortable using English UI</i>▪ <i>Only occasional need for multilingual communication</i>	<ul style="list-style-type: none">▪ <i>Only need to standardize on one Non-English language version in your organization</i>	<ul style="list-style-type: none">▪ <i>Enterprise need to deploy, support, and manage multiple language user environments (even on the same PCs)</i>
Standard English Version			
Localized Version			
NEW Multilanguage Version			

Windows 2000 MultiLanguage Technology

Options by version

Level of Support	<ul style="list-style-type: none"> ▪ <i>Input View and Print in over 60 languages</i> 	Full Localized UI <ul style="list-style-type: none"> ▪ <i>Including Menus</i> ▪ <i>Help Files</i> ▪ <i>Folder names</i> 	Switch UI to any language* with 90% localization <ul style="list-style-type: none"> ▪ <i>Including Menus</i> ▪ <i>Dialog Boxes</i> ▪ <i>Help Files</i> 	Manage only one O/S code base for IT environments needing multiple language support	Deploy only one Service Pack for Multiple Language IT environments
Standard English Version	<input checked="" type="checkbox"/>				
Localized Version	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
NEW MultiLanguage Version	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

*Any of the over 20 languages supported by Windows 2000

Bottom Line Best

Practice Deploy Windows 2000 MultiLanguage version on the desktop

- ◆ **Flexible support for multiple system UI languages**
- ◆ **Best Data Sharing**
- ◆ **Best Roaming User Scenario**
- ◆ **Best Connectivity**



Demo

Upgrade Path for MultiLanguage Version

**Supports any upgrade that
English**

Windows 2000 supports

- ◆ **No cross-language upgrades**
 - **US Windows 2000 -> Windows 2000 MLV**
 - **US Windows NT 4.0 -> Windows 2000 MLV**
 - **German Windows 2000 -/> Windows 2000 MLV**
 - **Japanese Windows NT 4.0 -/>**

Setting Up An MLV Client

- ◆ Select languages for which this machine will support data
 - Drop-down list before character mode setup contains language group options
- ◆ To display the system UI in a language, you must install its language group
 - Important for Win Logon (see GUI setup)

GUI Setup

Regional Settings Dialog Box

- ◆ **Very similar to Control Panel dialog**
- ◆ **Set default system locale**
 - **Affects ANSI applications**
 - **Per-machine setting**
- ◆ **Set user default locale**
 - **Affects date/time/currency formatting**
 - **Per-user setting**

GUI Setup

Regional Settings Dialog Box

- ◆ **Set default input language**
 - **Add language/input method pairs**
 - **See control panel for other options**
- ◆ **You can set international settings during unattended setup**

Choosing Computer Names

- ◆ **A pure Windows 2000 environment uses UTF-8 for DNS names**
- ◆ **Reality: So down-level clients can find you, use ASCII for naming**
 - **Machine Names**
 - **Domain Names**
 - **User Names**
- ◆ **Windows will warn you about “illegal” characters in DNS**

Guidelines For Account Names And Passwords

- ◆ Windows 2000 supports all Unicode characters
- ◆ Reality: Limit the characters used
- ◆ “Roaming” a user cannot login to a machine that cannot produce his user name and password
- ◆ Winlogon lets you change input locales during logon...
 - ...If language groups were added at setup time

Issues With Mixed Domains

- ◆ **Down-level Clients may not understand Unicode or all supported languages**
 - Your machine name may appear as “□□□□” or “????”
 - It works, but it’s not very usable
- ◆ **Localized Editions of Windows 2000 have localized group and folder names**
 - “Administrator”
 - “c:\My Documents”

Roaming Profiles

- ◆ **MLV Edition counts as one localized version**

Roaming works best between machines with the same localized version of Windows

How Roaming Works

- ◆ **User settings roam**
 - E.g., locale preference
- ◆ **Language-related files do not roam**
 - Keyboard/IME, NLS tables, UI-related files
- ◆ **Localized path names will create duplicate entries when you sync**

Sharing Data: System Support

- ◆ To display data, you must have the appropriate system language group(s) installed
 - Tables for character conversion, sorting
 - Fonts
 - Glyph shaping and layout modules
- ◆ To enter/edit data, you must have the appropriate input

Sharing Data: Application Support

- ◆ **Unicode-based applications share data best**
- ◆ **ANSI-based applications:**
 - **Support one language group only**
 - **Require system default locale setting to emulate localized Windows 9x system**
 - **Must follow best coding practices**
- ◆ **“Mixed” Unicode/ANSI applications may support only a subset of Unicode**

Summary: High Level

- ◆ Windows 2000 supports *almost* all languages and cultures in use today
- ◆ All language versions support all languages in content
- ◆ Multilanguage Version supports multiple language interfaces in one product

Summary: Deployment Guidelines (1/4)

Deploy localized Windows 2000 if

- **Users require full localization**
- **All users prefer the same user interface language**

**◆ Deploy Windows 2000
MultiLanguage version if**

- **Users require multiple UI languages**
- **Acceptable for some UI elements to remain un-localized**

Deployment Guidelines

(2/4)

➤ To use roaming profiles ...

- **Use the same localized version or Windows 2000 MultiLanguage version on all systems**
- **Install required language groups on relevant systems**
- **Avoid using non-ASCII characters in username and password**
- ◆ **If domain includes downlevel clients:**
 - **Restrict names to ASCII**
 - **Includes passwords, usernames, computer names, etc**

Deployment Guidelines

(3/4)

- ↙ **To create multi-language content**
 - **Install required language groups**
 - **Install required input locales**
 - **Deploy Unicode application, such as Office 2000**
- ◆ **To exchange multi-language documents**
 - **Install required language groups on all relevant systems**

Deployment Guidelines

(4/4)

To use applications in various languages:

- **Install required language groups**
- **ANSI applications:**
 - **Set system default locale to required value**
 - **Reboot**
 - **Note: You cannot simultaneously use multiple ANSI applications in different languages!**
- **Unicode applications**
 - **Use with any system default locale**

For More Information

- ◆ Refer to the TechNet website at www.microsoft.com/technet/events/content
- ◆ General information on international support:
 - <http://www.microsoft.com/globaldev>
- ◆ Implementing Unicode and ML support in Applications:
 - <http://www.microsoft.com/msj/0499/multilangUnicode/>

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